BSC 307 5-E Model Lesson Plan

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| **Title: Avian Adaptations** | **Grade Level:**  **9** |
| **Objectives:** TSWBAT…  Predict the environmental conditions that would cause a particular physical adaptation to arise within a certain species of bird.  Take what is learned in the lesson about adaptive bird behaviors and apply it to the adaptations of other organisms. Using the same behaviors for the previous adaptations. | |
| **Illinois Learning Standards:**  State Goal #11 Understand the processes of scientific inquiry and technological design to investigate questions, conduct experiments and solve problems.   * 11.A.4a: Formulate hypotheses referencing prior research and knowledge. * Descriptor Stage I – 11A-1: Formulate independent content-specific hypothesis referencing pertinent reliable prior research, or proposing options for appropriate questions, procedural steps, and necessary resources.   State Goal #12 Understand the fundamental concepts, principles, and interconnections of life.   * 12.B.4a: Compare physical, ecological, and behavior factors that influence interactions and interdependence of organisms. * Descriptor Stage I – 12B-1: Identifying the roles and relationships of organisms in their community in terms of impact on populations and the ecosystem. | |
| **Engagement:** Student will be presented with the problem for the lab. And have to solve the problem by using their skills in the analysis of various bird specimens. The background for the problem is that the student works for the Museum of Natural History in Chicago. They are a young new intern working in the organism collection department. They have been asked to organize a new avian exhibit to go along with the new shipment of bird specimens that just came in. In order to organize the exhibit they must categorize the birds by the environmental elements that make them have the traits that they do. Such elements as: food that they eat and lifestyle qualities that shape their wings and legs. | |
| **Exploration**: The student will observe the various bird specimens and make a prediction or guess as to how or why the bird has developed a certain adaptation. They will spend 2-3 minutes trying to discover what types of food their bills are made for, under what circumstances they would use their legs for, and how they use their wings. | |
| **Explanation:** As a class, we will determine what the students think each feature that they observed for each bird has been adapted for. For any students that guess incorrectly I will explain the nature of each adaptation. If possible will show a video showing how the organism uses the structural feature to go about its life processes. | |
| **Elaboration:** I will have the students take the adaptations that they observed with the bird specimens and apply the various adaptations to the similar roles that these adaptations may play in other organisms. For example, the student could be asked to take the quality of eating fish and think about adaptations that other organisms have to help eat fish. | |
| **Evaluation(Assessment Strategies):** Careful observation of the worksheets that were provided should show whether or not the student was able to truly make a prediction and see whether or not they were correct. Also, answering the questions at the end of the worksheet will provide me with the means to see whether or not the students were able to understand the material. | |
| **Rationale:**  This laboratory exercise gives students the opportunity to take a critical look at not only the organisms that live around them, but also the organisms that can be viewed within the laboratory. Analyzing the structural features of an organism is one of the staples of becoming a biologist. It is also important to observe the qualities of nature and how they come about. Students will be able to use what they predict for the lifestyles of the organisms to shape an exhibit at the Museum of Natural History. The use of categorization by physical features is very important to using the classification system of taxonomy. | |
| **Resources:**  10 stuffed bird specimens.  Worksheets and tables. | |